



EGUsphere, referee comment RC3
<https://doi.org/10.5194/egusphere-2022-225-RC3>, 2022
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Comment on egusphere-2022-225

Anonymous Referee #3

Referee comment on "Building-scale flood loss estimation through vulnerability pattern characterization: application to an urban flood in Milan, Italy" by Andrea Taramelli et al., EGU Sphere, <https://doi.org/10.5194/egusphere-2022-225-RC3>, 2022

This paper presents an approach to calculate flood losses to residential buildings using a Source-Pathway-Receptor-Consequence model. The proposed approach is applied to an area of Milan, Italy which is frequently impacted by flood events. The authors apply the approach to a historical flood event that occurred in 2014 and three flood scenarios. The vulnerability of residential buildings is mapped, and damage curves are derived.

The proposed approach has merit and the results are interesting, however, the paper is at times hard to follow and would benefit from some changes before publication. I have outlined my suggestions below.

Specific Comments

Figure 1: what does the blue outline represent in the right panel in Figure 1? Is it the area of inundation or the study boundary? It would be useful to add a label describing this area to the map legend.

Figure 2: this figure needs to be improved. Only the source and the pathway symbols are easily understood. It is not clear what the receptor or consequence arrows are referring to. At the very least, the figure description needs to be improved so that the image can be understood on its own. I would suggest also improving the figure to make it more understandable.

Line 134: What digital terrain model are you using?

Line 139: "This model analyses the DTM with hydrology...". What does this mean? Please expand on the approach.

Line 143: resampled using what approach? From what resolution?

Equation 1: Is the denominator supposed to be Building Footprint Area?

Line 179: What is the reasoning behind assigning a building with a basement a more favourable weight than a building without a basement?

Section 3.2.1: How sensitive is the final score (and thus your outcomes) to the assumptions you make about the weights? For example, the choice of how many weights you assign to each factor has an impact on results. Are these weights taken directly from the literature? It would be good if the authors could elaborate a bit further on this.

Figure 6: I can't make out what categories half the box plots belong too because they are so small. Also, the text is too small to be read on the smaller maps. Please adjust the figure.

Technical Errors

Line 25: consider replacing "it" with "one"

Line 40: "location" should be "location's"

Lines 64-66: Sentence beginning "Vamvatsikos" and ending "various scales". I would consider rephrasing this for clarity

Lines 135-134: Sentence beginning "Specifically," and ending "near them". I would consider rephrasing this for clarity

Equation 2: Period of Construction is shortened to "PC" in the equation but to "PT" in the preceding text. Change one to maintain consistency.

Line 212: "Fig.1C " in the text is labelled "Fig C1" in the Appendix. Please change for consistency

Figure 10: It seems the labels for figure 10b and Figure 10c are the wrong way around.